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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

June 23, 1997

HAND DELIVERED

Mr. William F. Caton
Office of the Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: In the Matter of Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service, ET Docket No. 95-18.

Dear Mr. Caton:

Enclosed herewith is one (1) original, and five (5) copies of our comments submitted to the Report and Order and Further Notice of Proposed Rulemaking in ET Docket 95-18.

Sincerely,

COMSEARCH

Christopher R. Hardy
Vice President, Microwave and Satellite
Enclosure

No. of Copies rec'd 0+5
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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Section 2.106 of the	)	ET Docket No. 95-18
Commission's Rules to Allocate	)	RM-7927
Spectrum at 2 GHz for Use by the	)	PP-28
Mobile-Satellite Service	)	

COMMENTS OF COMSEARCH

Pursuant to the Commission's Rules, 47 C.F.R. Section 1.405, Comsearch hereby submits these comments on the First Report and Order and Further Notice of Proposed Rulemaking (FNPRM) in the above captioned proceeding.

Comsearch is an independent engineering firm specializing in spectrum management of terrestrial microwave, satellite and mobile telecommunications systems. In this role, we provide consultant services to all classes of users including those regulated under Part 25 and 101 of the Commission's Rules. Our experience working in both the microwave and mobile communications industries, especially in the relocation efforts associated with 1.9 GHz PCS, provides us with a unique perspective on several issues surrounding the FNPRM. Specifically, we will address sharing issues at 2110 - 2130 MHz between Broadcast Auxiliary Service, Cable Television Relay Service, Local Television Transmission Service , (collectively referred to as "BAS") and Fixed microwave and the

need for proper inter system and inter service frequency coordination between the Mobile Satellite Service (MSS) providers and the incumbent Fixed Service (FS) providers.

BAS Sharing with FS

In paragraph 69 of the FNPRM, the Commission requests comment on proposals for potential sharing between BAS facilities and Fixed microwave in the 2110 - 2130 MHz band. According to a search of the Comsearch database, there are approximately 5,100 microwave links operating in this band segment (See attachment 1). Most of these paths are duplex, operating on 3.2 - 3.5 MHz bandwidth channels providing interconnection of cellular base stations. We agree with the Commission, in general, that effective sharing of spectrum between mobile BAS and FS operations is unlikely. Comsearch speculates, however, that certain procedures could be employed to possibly ease the transition of BAS into the Fixed microwave spectrum.

Several studies have identified a conflicting number of fixed stations currently operating in the BAS spectrum. [1] We believe that sharing may be possible between the BAS fixed links and FS in the 2110 - 2130 MHz spectrum through the use of existing Part 101 interference analysis and prior coordination procedures.[2] Those fixed link paths unable to move to the 2.1 GHz band due to

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[1] Hammet and Edison, Inc study prepared for the National Association of Broadcasters; "Estimate of Relocation and Retrofit Costs for the 2 GHz Television Broadcast Auxiliary Band in Order to Accommodate MSS", June 19, 1995. In the report a study done by the Carl T. Jones Corporation was referenced estimating 2,586 fixed stations and 1,420 mobile stations while Hammet and Edison estimated approximately 2,000 fixed stations and 5,500 mobile facilities in the 1990 - 2025 MHz spectrum.

[2] We recognize the increased difficulties with finding clear spectrum due to the wide bandwidth (proposed 15 MHz) of a

interference concerns could be accommodated in the 7 GHz and 13 GHz bands. This relocation effort would reduce the congestion in the existing BAS band by approximately 25% according to the Hammet study and leave five channels available for completely mobile operations in the 2025 - 2110 MHz band. Inter system coordination in the 2110 -2130 MHz band between fixed BAS facilities and FS facilities may eliminates or reduces the FS relocation requirements and promotes efficient sharing of the spectrum.

In addition, FS operations in portions of the country may never have to relocate owing to the usage requirements of BAS nationwide. In those areas where BAS services are infrequently used it may be possible to utilize one of the lower allocated channels in the 2025-2110 MHz BAS band for mobile operations in order to avoid interfering with FS facilities. In areas where concentrated use of BAS services would immediately require mobile use of the 2110-2130 MHz spectrum, exclusion zone type calculations can be performed to identify which FS facilities may require relocation. Conversely, these exclusion zone studies could be used to identify certain known and controlled locations, such as sporting venues, where mobile and fixed BAS use of the 2110 - 2130 MHz band may be immediately available. More comprehensive statistics on the use of BAS services nationwide would be required to make an accurate assessment of this type of spectrum sharing between FS and and mobile BAS.

BAS system, however we feel the concept has merit and deserves further study.

The Commission's proposal to make the BAS channelization plan primary on "January 1, 2000 or the day after the last FS licensee in the 2110-2130 MHz band has been relocated needs some examination.[3] Comsearch believes that if the facilities in the 2110-2130 MHz band are required to relocate it would necessitate the relocation of the corresponding paired channels in the 2160-2180 MHz band. This in effect would mean that approximately 10,000 facilities would require relocation. This could certainly not be achieved by January 1, 2000, even if relocation efforts were to begin today. Likely, it would require an additional 1-2 years or more to complete such a relocation effort. By comparison, one can look at the recent relocation activity associated with Personal Communication Services (PCS) at 1.9 GHz. We estimate that agreements have been successfully negotiated and "relocation" performed on approximately 3,000 links during the past two years. At this pace, the proposed relocation of the approximate 5,100 links in the 2110 - 2130 MHz band would take at least 3.5 years. Once again an interim spectrum sharing solution between BAS and FS could be the answer.

MSS Sharing with FS

In paragraph 73 of the FNPRM, the Commission recommends sharing whenever possible within the 2165-2200 MHz band segment. Comsearch agrees with this concept as being an economical and efficient use of this spectrum. While we understand that the technical considerations for sharing are, at this time, being deferred, we would like to affirm our position that if sharing is to occur that proper inter system frequency coordination should be performed in order to assure that the incumbent FS facilities operate in an interference free environment. Comsearch wholly supports the efforts of the

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[3] See FNPRM, para. 69.

TIA Joint Working Group 34.2/14.11 examining MSS-FS sharing and has been actively involved with this process. Once the industry has determined the correct interference criteria, Comsearch believes that the subsequent coordination process should be similar to the PCS-FS coordination requirements, following the C.F.R. 47 Part 101.103 rules and in this case Part 25 for the satellite services specific issues. This process will facilitate sharing arrangements and protect incumbent interests by requiring the MSS community to perform an interference analysis prior to deployment. Using industry accepted criteria, the MSS provider will forward this analysis to each of the potentially affected incumbents for their review. Upon examination of the proposal, the incumbent can determine whether his facilities will experience harmful interference. The incumbent is then provided with a period of time, typically 30 days, in which to respond if potential conflicts are identified. This process has been found to be very effective in the Part 101 bands and in the recent PCS relocation efforts at 1.9 GHz.

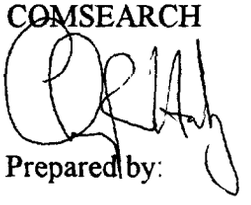
Relocating links in the 2180-2200 MHz band will also require relocation of the corresponding paired links in the 2130-2150 MHz band as suggested in paragraph 79 of the FNPRM. In some cases it would not be feasible and in most cases it would not be economical to operate a duplex link on widely separated frequency bands. The design considerations, including link propagation, tower placement and loading, and overall system compatibility issues would make it impractical to convert to such a dual band frequency band system.

In conclusion, Comsearch believes that sharing between BAS and FS facilities may be possible in the 2110 - 2130 MHz band by initially limiting BAS use of this band to fixed operations and

implementing Part 101 interference analysis and coordination procedures between the two services. In those areas where more than five channels for mobile communication are required, exclusion zone type analysis can be used to selectively determine which FS stations in the 2.1 GHz band may require relocation or which geographic areas are currently available for mobile use. We feel that the date to make the BAS rechannelization plan primary in the 2110 - 2130 MHz spectrum may be more than 3 years in the future due to the large number of incumbent FS facilities that would be required to relocate. In the 2165-2200 band, Comsearch agrees with the industry efforts to examine spectrum sharing between MSS and FS and recommends the Commission require a Part 101 type inter system coordination process..

Respectfully Submitted,

COMSEARCH



Prepared by:

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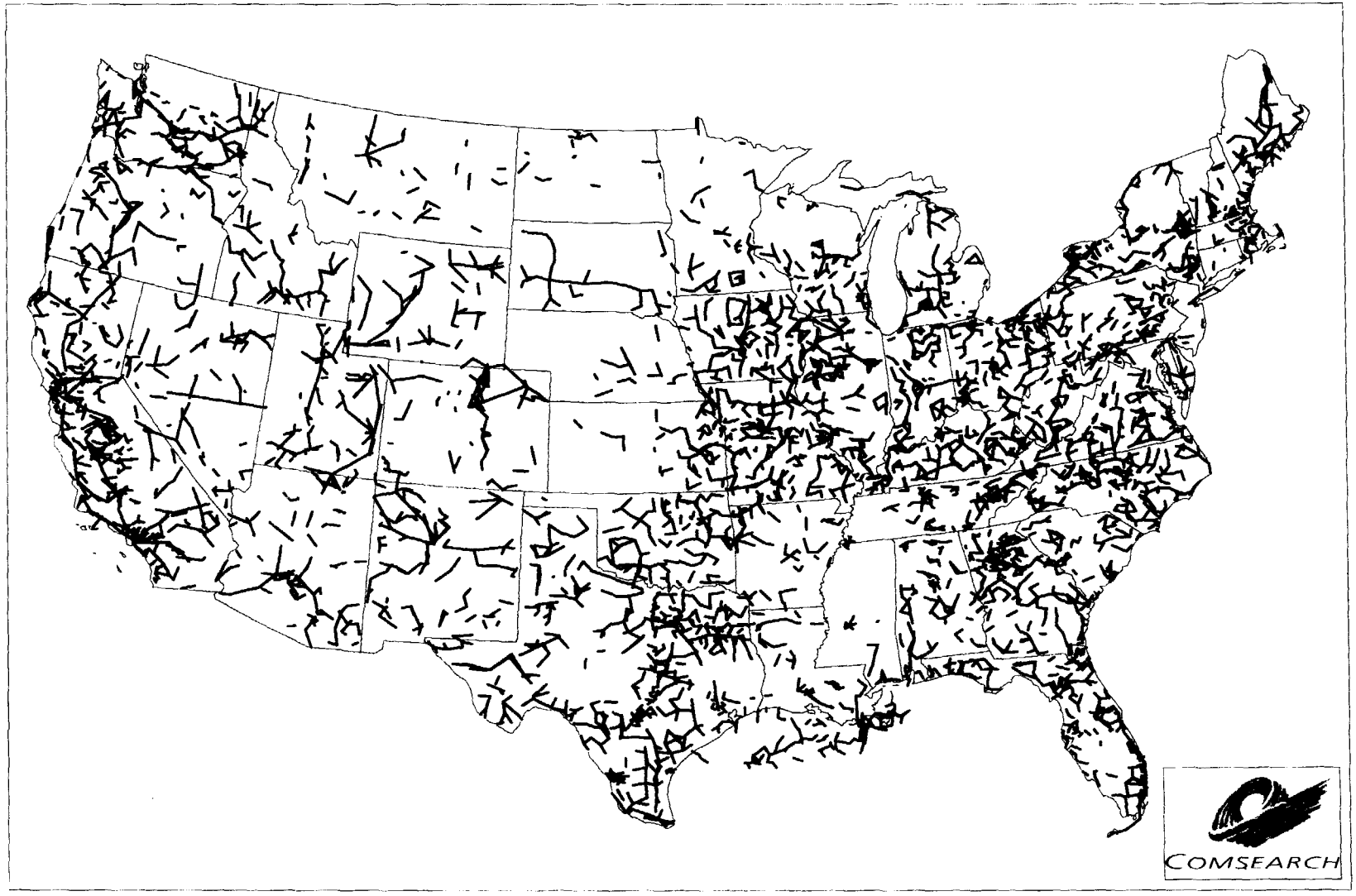
UNITED STATES TERRESTRIAL MICROWAVE PATHS

PATHS INCLUDING CHANNELS IN THE 2110 - 2130 MHz RANGE



ATTACHMENT 1